Stages of infection

Primary infection

The very first few weeks of HIV infection are called primary HIV infection. While most people do not realise that they have HIV at this time, some people do feel unwell. This is the result of the immune system’s production of antibodies which mount a defence against HIV known as 'seroconversion'.

Symptoms at this time may include a sore throat, fever, tiredness, headache, a skin rash, aching muscles and joints, and/or swollen lymph glands. However, because these symptoms are very similar to those of influenza or mononucleosis and are often minor, medical professionals often fail to suggest an HIV test at this time.  

Asymptomatic infection

After seroconversion, the immune system is usually able to fight the virus, often for several years. People usually feel well, look healthy and carry on with their daily lives.

However, laboratory tests would indicate some damage to the immune system. Moreover, HIV also drives the immune system into an ongoing state of heightened activity. This chronic immune activation or inflammation continues for the rest of the person’s life and probably contributes to the increased rates of cardiovascular disease, cancers and other health problems in people living with HIV.

The duration of the asymptomatic stage with few symptoms varies from person to person and can be as long as 15 years. It can be shorter in people who are older, have certain HIV subtypes, have a specific genetic background, are malnourished or have a co-infection such as hepatitis or malaria.

However, if people are diagnosed, begin to take antiretroviral treatment during this period and continue to do so, they may never become ill because of HIV.
Symptomatic infection

Without treatment, people living with HIV will eventually get ill. The virus weakens their immune system so much that they develop infections that other people are able to fight off, known as 'opportunistic infections'.

Initially, symptoms may be mild, such as skin problems, ear infections and moderate weight loss.

More serious illnesses may occur as damage to the immune system worsens, including pneumonia, ongoing diarrhoea and tuberculosis (TB). At the stage of very advanced HIV infection, known as AIDS, different diseases may affect different parts of the body simultaneously and may be life threatening.

AIDS can be halted and reversed with antiretroviral treatment.

Health monitoring

Doctors use a range of tests and systems to monitor the health of their patients.

Viral load tests measure the quantity of HIV in a small sample of blood. Viral load is extremely high in the first few weeks after infection, but may then be low for some years. A rising viral load reflects a more widespread circulation of HIV in the body and a greater risk of ill health.

Viral load tests are primarily used to monitor the impact of antiretroviral treatment, the aim of which is to reduce viral load to an extremely low or 'undetectable' level.

CD4 count tests measure the number of CD4 cells, also in a blood sample. CD4 cells are an important part of the immune system, so a rising CD4 count reflect a strengthening and improving immune system. A falling CD4 count shows that the immune system is weakening.

CD4 counts are frequently used to determine when antiretroviral treatment should be started. They have less importance when a person is taking treatment.

Monitoring when blood tests are unavailable

However, these blood tests are not readily available in all settings. Often, analysis must be done in a specialised laboratory. This is changing with the development of point of care versions of the tests, but access is not yet universal.

In this situation, doctors use the World Health Organisation’s (WHO) clinical staging system. This relies on observation and diagnosis of illnesses and other clinical events to classify people living with HIV into one of four clinical stages. Individuals with no symptoms are in Stage 1 whereas those with the most serious illnesses are in Stage 4.

The system helps doctors identify individuals at high risk of illness, guiding decisions on the use of preventative (prophylactic) medications and antiretroviral treatment. For example, if a CD4 count is not available, current WHO guidelines recommend antiretroviral treatment for any HIV-positive adult in stage 3 or 4.

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